

THE CAMELLIA ROOT-KNOT NEMATODE  
(Meloidogyne camelliae Golden)

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INTRODUCTION

The camellia root-knot nematode, Meloidogyne camelliae Golden, was described from specimens collected from camellia, Camellia japonica L., from Japan. These infected plants were intercepted by officials of the United States Department of Agriculture.

MORPHOLOGY

The perineal pattern (finger print-like markings on the female cuticle that are used as important diagnostic characters) was found to be readily distinguishable from perineal patterns of other Meloidogyne species (Fig. 1, L.).

The striae in the M. camelliae were very coarse or almost rope-like and formed a perineal pattern with a square to rectangular outline with proportions which sometimes were star-like (Fig. 1, R.). There are other distinctive morphological characters of M. camelliae.

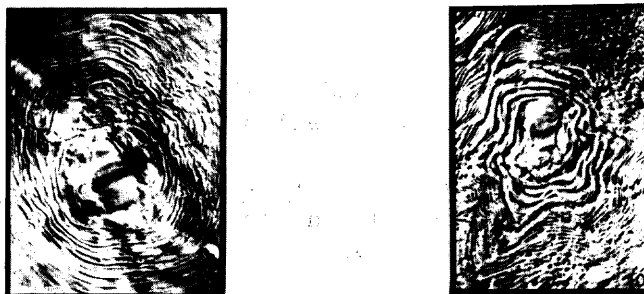


Fig. 1. Photomicrographs of Meloidogyne spp. perineal patterns. Left, a non-coarse perineal pattern of a Meloidogyne sp.; Right, coarse star-shaped perineal pattern of M. camelliae.

HOST RESPONSE

On Camellia japonica roots and Oxalis sp., M. camelliae does not appear as a usual root-knot species. There is slight swelling of the root at the infection site. Half or more of the female root-knot nematode body protrudes

from the root in a manner which is more characteristic of cyst nematodes (Heterodera spp. or Globodera spp.) than the average root-knot nematode. Meloidogyne camelliae reproduced but slightly on tomato, Lycopersicon esculentum Mill. 'Marglobe'.

Plants which are not suitable hosts include lemon, Citrus limon (L.) Burm. 'Rough'; corn, Zea mays L. 'Golden Bantam'; rose, Rosa sp.; soybean, Glycine max L.) Merr. 'Lee'; and wheat, Triticum aestivum L. 'Red Coat'.

Records contained in The Bureau of Nematology, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, indicate Meloidogyne incognita (Kofoid and White) Chitwood to be the only root-knot nematode species to occur on Camellia japonica in Florida.

#### SURVEY AND DETECTION:

1) Camellias showing unthrifty appearance may be suspected of having nematode injury.

2) Roots of unthrifty camellias should be examined for galling, which may be slight as compared to the galls produced by most other root-knot nematodes. Closer examination by aid of a hand lens may reveal swollen, white female nematodes protruding from infested roots.

3) Roots and soil from camellia plants suspected of being infested by the camellia root-knot nematode or other plant parasitic nematodes should be submitted to the Bureau of Nematology.

#### REFERENCES:

1. Golden, A. M. 1978. Morphology of undescribed root-knot nematodes from pin oak in Virginia, and from camellia in Japan. J. Nematol. 10:288 (Abstract).
2. Golden, A. M. 1979. Descriptions of Meloidogyne camelliae n. sp. and M. querciana n. sp. (Nematoda: Meloidogynidae), with SEM and host-range observations. J. Nematol. 11:175-189.